REMARKS

By the above amendment, Applicant has amended the specification to clarify the novelty of the invention.

Also Applicant has amended 11 of the 16 claims to define the inventions more particularly and distinctly so as to overcome the technical rejections and define the invention patentably over the prior art. A new claim is also provided.

The Objection to the Drawings is Overcome

Figures **2** and **4** were objected to since they were expected to be prior art.

Applicant requests reconsideration and withdrawal of the objection to FIG. 2 since it is taught clearly in the specification as an example of the data used in the claimed invention. Specifically, the last paragraph on page 8 describes how FIG. 2 illustrates a part of circuit design **110**, value change dump **120**, two candidate branches **150**, one correction probe **130** and one restriction probe **140** as well as how they are connected in an example.

Applicant requests reconsideration and withdrawal of the objection to FIG. 4 since it is taught clearly in the specification as a part of the implementation of the

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claimed invention. Specifically, the last paragraph on page 17 describes how FIG. **4** illustrates the hardware that can be used to implement the claimed invention in 2 different ways.

Accordingly applicant submits that these figures are not prior art and therefore requests withdrawal of this objection.

The Claims Rejection Under 35 USC §112 is Overcome

Some claims were rejected under 35 U.S.C. 112, second paragraph since they used the phrases "such that" and "likelihood". The claims have been amended to completely avoid these phrases. The specification is also amended to indicate that "rating" and "likelihood rating" refer exactly the same thing.

The Claims Rejection Under 35 USC §102(b) over Puri et al is Overcome

All claims were rejected under 35 U.S.C. 102(b) since it was said being anticipated by Puri et al.

Applicant requests reconsideration and withdrawal of this rejection because of the following reasons:

(1) **The constraints in the present application are input data that users provide, but Puri's constraints are basic principles that the method's**

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outputs have to follow. As stated in column 7, lines 50-61 and column 8, line 65 – column 9, line 6, Puri's constraints are not provided by users, and user's inputs often do not satisfy some of these constraints. The first full paragraph on page 6 in this application clearly stated the input nature of these probes and candidate branches. Claim 1 is amended to clarify the probes and candidate branches as input data in the new step while avoiding any terms related to constraints. Claim 17 is added to emphasize the role of the optional set of restriction probes.

(2) **Puri's circuit design is the method's final result, but the circuit design in the present application is a part of the method's user inputs.** As stated in column 4, lines 58-64, Puri's final result is a circuit design, similar to what is suggested in its title and its abstract as well as many other places in the specification. The first 2 paragraphs on page 6 in this application clearly stated the input nature of the circuit design. Claim 1 is amended to clarify the circuit design as input data in the new step.

(3) **Puri does not assume any mistakes in the input data, but such mistakes are the only reason to use the present application's method.** Puri does not discuss any possibility of mistakes in the user input. The present application always assumes the existence of mistakes in the circuit design as stated in the last 2 paragraphs on page 5. Claim 1 calls the claimed invention "a method for debugging ..." The last paragraph on page 2 and the last full paragraph on page 5 are amended to clarify the connection between debugging and locating mistakes.

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(4) **Puri does not involve any simulation at all, but the method in the present application requires simulation results in its input data.** Puri does not discuss simulation at all. As stated in the last paragraph on page 5, the third paragraph on page 6 and the last paragraph on page 7, some simulation results are included in the correction probes and the restriction probes.

(5) **Puri's method focuses on states and state signals, but the present application does not.** Puri's FIG. 8 clearly shows the center role of states and state signals. As stated in column 26, lines 23-26, Puri uses BDD to find values of state variables (also called state signals). This application does not distinguish state signals from other signals. The only special signals in the present application are those marked by users with the candidate branches, correction probes and restriction probes. The present application does not involve states, which are implemented by state signals. It uses BBD to find values of candidate branches as stated In the second paragraph on page 12. State signals have their natural locations in the circuit design, but the locations of candidate branches, correction probes and restriction probes can be anywhere that user chooses as stated in the first and the last paragraphs on page 7. As shown is FIG. 8, Puri gets state signal values In step 222 which is way before getting the logic circuit in step 228. In the present application, candidate branches are obtained after obtaining the circuit design because they are just locations in the circuit as stated in the last paragraph on page 6.

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(6) **The Input data to Puri's method are signal transition graphs, but the present application does not use signal transition graphs at all.** As stated in column 4, lines 22-67, the only user input to Puri's method is in the form of signal transition graphs which can be transformed into circuit design only at the end as shown in FIG. 8. As stated on pages 5-7 in the present application, the user input to the method includes only the circuit design, the simulation result, and some marks (candidate branches, correction probes and restriction probes) while they are not similar to signal transition graphs.

Accordingly applicant submits that claims 1-17 are allowable and solicits reconsideration and allowance.

Conclusion

For all of the above reasons, applicant submits that the drawings, the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore he submits that this application is now in condition for allowance, which action he respectfully solicits.

Conditional Request For Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any

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reason, this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 706.03(d) and § 707.07(j) in order that the undersigned can place this application to allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

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